

CLAIMS

1. Hot rolled steel sheet excellent in chemical convertibility produced through a hot rolling and pickling step, comprising, by mass%,

5 C: 0.03 to 0.15%, Si: 0.8 to 3.0%,  
Mn: 0.5 to 3.0%, P: 0.07% or less,  
S: 0.01% or less, Al: 0.015 to 0.1%,  
N: 0.001 to 0.008%,

10 and the balance of Fe and unavoidable impurities, the oxides on the steel sheet surface having, by mass%, an Si concentration of 3.5% or less and an Mn concentration of 3.5% or less.

15 2. Hot rolled steel sheet excellent in chemical convertibility produced through a hot rolling and pickling step, comprising, by mass%,

C: 0.03 to 0.15%, Si: 0.8 to 3.0%,  
Mn: 0.5 to 3.0%, P: 0.07% or less,  
S: 0.01% or less, Al: 0.015 to 0.1%,  
N: 0.001 to 0.008%, and

20 one or both of Ti: 0.02 to 0.3% and Nb: 0.01 to 0.5%,

Cu: 0.2 to 1.8% and Ni: 0.1 to 2.0%,  
Mo: 0.05 to 0.5%,  
B: 0.0002 to 0.006%, and  
Ca: 0.0005 to 0.005%

25 alone or in combination, and a balance of Fe and unavoidable impurities, the oxides on the steel sheet surface having, by mass%, an Si concentration of 3.5% or less and an Mn concentration of 3.5% or less.

30 3. Hot rolled steel sheet excellent in chemical convertibility as set forth in claim 1 or 2, characterized in that an average roughness Ra of the steel sheet surface is 3.0  $\mu\text{m}$  or less and a number of pittings of a diameter of 1  $\mu\text{m}$  to 0.3  $\mu\text{m}$  due to the pickling is an average 5 or less in squares of the steel sheet surface when dividing it into squares of 10  $\mu\text{m}$  per

side.

4. A method of production of hot rolled steel sheet excellent in chemical convertibility characterized by, in a pickling step when producing the hot rolled steel sheet of claim 1 or 2, dipping the sheet in an aqueous solution having, by mass%, an HCl concentration of 7 to 15%, an Fe ion concentration of 4 to 12%, and a balance of metal ions other than Fe and impurities, at a solution temperature of 80 to 98°C for 40 sec or more.

5  
10  
15  
10. A method of production of hot rolled steel sheet excellent in chemical convertibility characterized by, in a pickling step when producing the hot rolled steel sheet of claim 3, dipping the sheet in an aqueous solution having, by mass%, an HCl concentration of 7 to 15%, an Fe ion concentration of 4 to 12%, and a balance of metal ions other than Fe and impurities, at a solution temperature of 80 to 95°C for a time of a range of 40 sec or more to when the HCl concentration (mass%) x dipping time (sec) becomes 520 or less.

20  
6. A method of production of hot rolled steel sheet excellent in chemical convertibility as set forth in claim 4 or 5, characterized by said aqueous solution including, by mass%, 0.5 to 5% of HNO<sub>3</sub>.